Reprinted from Connecticut Medicine
November 1982 Issue, Vol. 46, No. 11

Sonographic Demonstration of an Intraluminal Bile Duct Metastasis

A Case Report

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Sonographic demonstration of common bile duct stones as well as abrupt cut-off or irregular tapering of the common duct from carcinoma of the head of the pancreas have been reported.[1,2] A recent case report described the sonographic diagnosis of a benign bile duct polyp.[3] To our knowledge, there has been no previous report of a malignant intraluminal mass of the bile duct depicted by sonography. We present a case of an intraluminal bile duct metastasis diagnosed by ultrasound.

Case Report

A 49-year-old white female presented with a two-week history of painless jaundice and pruritis. The total bilirubin was 14.4 mg/dl. The alkaline phosphatase was 986 i.u./ml. Sonography demonstrated a dilated, blunted common bile duct, dilated intrahepatic biliary radicals, and a rounded 3-4 cm. mass in the head of the pancreas. These findings were confirmed by transhepatic cholangiography. At surgery, a firm, stony hard, irregular mass in the pancreatic head was found. A cholecystojejunostomy and jejunojenostomy was performed. Transduodenal biopsies showed fibrosis. No malignancy was found in the biopsy specimens.

Ten months later, the patient was re-admitted with pruritis. The total bilirubin was 1.4 mg/dl., alkaline phosphatase 3003 i.u./ml. SGOT 380 i.u./ml. Sonography again demonstrated a dilated common bile duct; however, in addition, a non-shadowing solid intraluminal polypoid mass was visualized in the common duct just proximal to the site of obstruction (Figures 1A, 1B). Transhepatic cholangiography confirmed these findings, (Figure 2) and, in addition, revealed obstruction of the cystic duct. A Whipple's procedure was performed. The surgical specimen revealed two submucosal metastatic tumor nodules in the common bile duct, one of which corresponded to the intraductal polypoid mass seen sonographically. An islet cell tumor was found in the head of the pancreas. Metastases were also seen in vascular channels surrounding the common duct.

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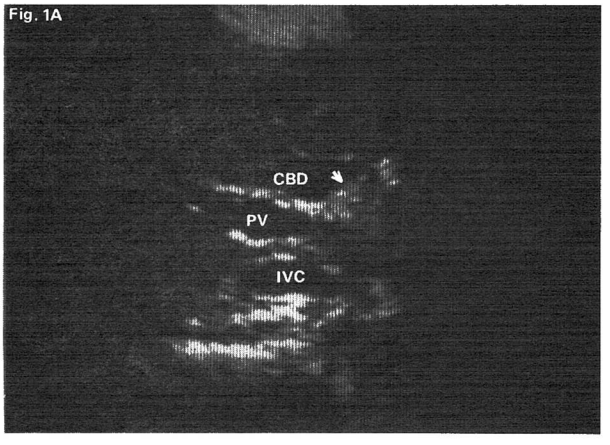

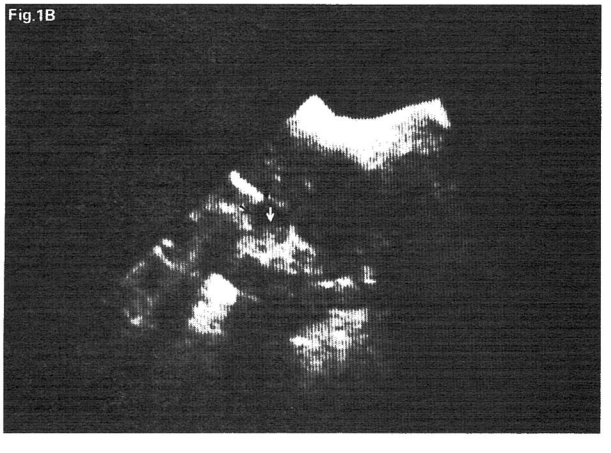

Figure 1
A. Right-anterior-oblique view of the porta hepatis.
CBD=common bile duct (dilated)
PV=portal vein
arrow=intraluminal metastatic islet cell tumor nodule
B. Cross-section through the common bile duct.
black arrows=wall of the common bile duct
white arrow=intraluminal metastatic nodule

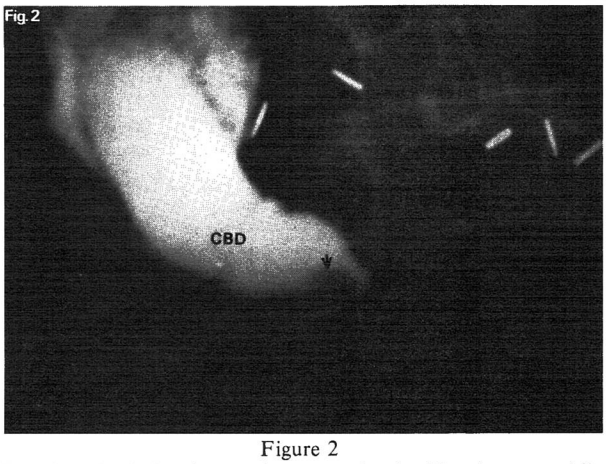

Figure 2
Transhepatic cholangiogram demonstrating the dilated common bile duct (CBD) and a polypoid filling defect (arrow) corresponding to the metastatic nodule seen with sonography.

Discussion

The common bile duct is readily visualized when the right anterior oblique position is employed.[1] Both the degree of obstruction and nature of the obstructing lesion can be described by ultrasound in cases of surgical jaundice.[2,4-6].

Sonography of the intrinsic bile duct lesion can help in the differential diagnosis by demonstrating the presence or absence of acoustical shadowing. In this case, the polypoid defect was shown not to be a calculus and thus helped the radiologist and surgeon in their interpretation of the subsequent transhepatic cholangiogram. In fact, the ultrasound study revealed all the details of the bile duct lesion, and the transhepatic cholangiogram added no additional anatomic information. This example supports the findings of Koenigsberg *et al.*,[3] who concluded that transhepatic cholangiography should be used only in cases where the biliary tract cannot be adequately visualized by sonography.

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